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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			EXAMINER LEUNG, JENNIFER A	
			ART UNIT	PAPER NUMBER

1764

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,030

Applicant(s)

ICHIKAWA ET AL.

Examiner

Jennifer A. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-32,34 and 36 is/are pending in the application.
- 4a) Of the above claim(s) 12-15,19-32 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-11,16-18 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,4-32,34 and 36 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment submitted on April 10, 2006 has been received and carefully considered. The changes made to the Specification are acceptable. Claims 2, 3, 33 and 35 are cancelled. Claims 12-15, 19-32 and 34 are withdrawn. Claims 1, 4-11, 16-18 and 36 are active.

Response to Arguments

2. Applicant's arguments filed April 10, 2006 have been fully considered but they are not persuasive.

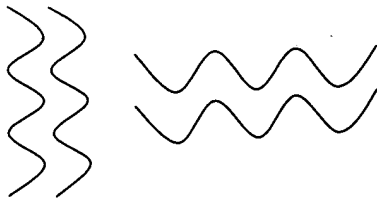
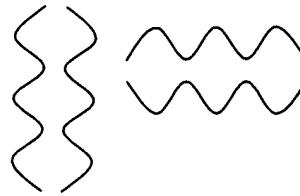
Comments regarding the rejection of claims 8 and 36 under 35 U.S.C. 102(b) as being anticipated by Hamada (JP 05-123580).

Applicants (page 4, first paragraph, of the response) argue,

“... independent claim 36 specifically requires the second wall face portions having a flat shape to intermingle with the first wall face portions having an undulated shape. A review of the drawings cited by the Examiner reveals that the shape of the waves are synchronized with each other, which is clearly established by the discussion in paragraphs [0013] and [0018], wherein it is stated that the wave shapes of the respective waved walls are synchronized with each other, and that the direction of the concave and convex shapes of the walls is the same direction. Such construction is not that recited in claim 8 and 36...”

Firstly, it is unclear as to how Applicants are attempting to define the term “synchronized”.

Therefore, the Examiner, as best understood, has defined the feature of “synchronized wave shapes” versus “non-synchronized wave shapes” according to the illustrations below, taken in view of Hamada's definition:

synchronized**non-synchronized**

Applicants do not appear to argue Hamada's feature of second wall face portions having a flat shape (e.g., walls 3; FIGs. 2a, 2b) that intermingle with first wall face portions having an undulated shape (e.g., walls 4; FIGs. 2a, 2b). It appears that Applicants are instead arguing that the apparatus of Hamada does not meet the claims because the waves or undulations of Hamada (i.e., defined by walls 4; FIGs. 2a, 2b) are "synchronized", and the direction of the concave and convex shapes of the walls 4 are in the same direction.

The Examiner respectfully disagrees. It is noted that Applicant's arguments are not commensurate with the language of the claims, because the features upon which Applicants rely (i.e., a particular synchronization of the wave shapes) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, it is noted that Applicants' arguments are not commensurate with their own disclosure. Looking to Applicants' FIG. 3, for instance, we see the claimed embodiment wherein wall face portions having a flat shape are intermingled with wall face portions having an undulated shape. Here, the waves or undulations defined by wall face portions 35A are clearly "synchronized", and the concave and convex shapes of said walls 35A are in the same direction.

Comments regarding the rejection of claims 1, 6, 7, 9, 10 and 16 under 35 U.S.C. 103(a) as being unpatentable over Hamada (JP 05-123580) in view of Gulati (US 4,323,614); and the rejection of

the dependent claims therefrom, in view of further secondary references.

Applicants (beginning at the bottom of page 4) argue,

“... the primary reference shows embodiments in which the shapes of the waves are synchronized with each other. A similar arrangement is shown in Fig. 2 of the secondary reference, wherein the shapes of the waves are synchronized to each other in both the Y-axis and the X-axis. The last section of independent claim 1 requires the recessions and protrusions on one wall face portion and the recessions and protrusions on the other wall face portion to be positioned in a manner so that the protrusions of each face one another and the recessions of each face one another. See instant Fig. 2 and the discussion in the specification at page 27, line 19 to page 28, line 22.”

Using the definition of “synchronized wave shapes” versus “non-synchronized wave shapes” from above, we see that the arrangement shown in Fig. 2 of Gulati is a “non-synchronized” configuration, and NOT the “synchronized” configuration argued by Applicants. The arrangement shown in Fig. 2 of Gulati clearly meets the instantly claimed limitation of a non-synchronized configuration, wherein “recessions and protrusions on one wall face portion and recessions and protrusions on the other wall face portion are positioned with *the protrusions of each facing one another and the recessions of each facing one another*” (see also Gulati, column 4, lines 10-22). Furthermore, it can be seen that Gulati’s FIG. 2 is essentially identical to Applicants’ own non-synchronized embodiment shown in FIG. 1(a). Applicants’ arguments are not found persuasive, and the rejection is maintained.

Comments regarding the rejection of claims 1, 4, 7, 10 and 16 under 35 U.S.C. 103(a) as being unpatentable over Omura (JP 61-68141) in view of Gulati (US 4,323,614); and the rejection of the dependent claims therefrom, in view of further secondary references.

As commented above, the wave arrangement as taught by Gulati structurally meets the

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claims. Furthermore, it appears that Applicants are arguing that the Omura reference should not be applied, since FIG. 2 of Omura is a “prior art monolithic catalyst carrier”, and not Omura’s own invention. The Examiner respectfully disagrees. Please note that patents are relevant as prior art for all that they contain. The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain.” In re Heck, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting *In re Lemelson*, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)). See MPEP 2123.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 8 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamada (JP 05-123580).

Hamada discloses an undulated-wall honeycomb structure having a plurality of cell passages defining a cell passage direction, which are mutually parallel in the cell passage direction; wherein intersection portions between walls defining said cell passages have a predetermined pitch in cross-sections perpendicular to said cell passages and are located in a pattern and wherein the wall face portions of said walls excluding said intersection portions have an undulated shape in both the cell passage direction and the cross-sectional direction perpendicular to said cell passage direction (see, for example, abstract, Figs. 1-3); wherein the

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wall face portions including portions having an undulated shape and fiat shape (see, for example, section [0022], Figs. 2a, 2b).

Instant claims 8 and 36 structurally read on the apparatus of Hamada.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 6-7, 9-10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada (JP 05-123580) in view of Gulati (US 4,323,614).

With respect to claims 1 and 7, Hamada discloses an undulated-wall honeycomb structure having a plurality of cell passages defining a cell passage direction, which are mutually parallel in the cell passage direction; wherein intersection portions between walls defining said cell passages have a predetermined pitch in cross-sections perpendicular to said cell passages and are located in a pattern and wherein the wall face portions of said walls excluding said intersection portions have an undulated shape in both the cell passage direction and the cross-sectional direction perpendicular to said cell passage direction (see, e.g., abstract, Figs. 1-3).

The apparatus of Hamada is substantially the same as that of the instant claims, but is silent as to whether the protrusions of each wall face portion face one another and the recessions of each face one another as claimed. However, Gulati discloses provision of having cell passages with the protrusions of each wall face portion facing one another and the recessions of each facing one another.

It would have been obvious to one having ordinary skill in the art to construct the apparatus of Hamada so as to have the protrusions of each wall face portion facing one another

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and the recessions of each facing one another as taught by Gulati, on the basis of its suitability for the intended use as a matter of obvious design choice, and the shape of the cell passages is not considered to confer patentability to the claim and since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

With respect to claim 6, the amplitude of the undulated wall appears to be at least 150% the thickness of the wall (see Hamada, for example, Figs. 1-2).

With respect to claim 9, Hamada discloses that the honeycomb structure has a center portion surrounded by an outer portion, the center portion comprising cell passages defined by undulated wall face portions; the outer portion comprising cell passages defined by flat wall face portions, the thickness of the wall 3 of the cell passages at the outer portion is greater than that of the wall 4 of the cell passages at the center portion (see, for example, sections [0019], [0021]).

With respect to claim 10, Hamada discloses that the honeycomb structure is made from activated carbon (see, for example, section [0032]).

With respect to claim 16, Hamada discloses that the honeycomb structure has an undulated surface for increasing the surface area, and carries a catalyst on the surface thereof for purifying exhaust gas. Placing the honeycomb structure in a housing is inherent therein (see, e.g., abstract, section [0001]).

5. Claims 1, 4, 7, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omura (JP 61-68141) in view of Gulati (US 4,323,614).

With respect to claims 1, 4 and 7, Omura discloses an undulated-wall honeycomb

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structure having a plurality of cell passages defining a cell passage direction, which are mutually parallel in the cell passage direction; wherein intersection portions between walls defining said cell passages have a predetermined pitch in cross-sections perpendicular to said cell passages and are located in a pattern and wherein the wall face portions of said walls excluding said intersection portions have an undulated shape in both the cell passage direction and the cross-sectional direction perpendicular to said cell passage direction (see, e.g., abstract, Figs. 2, 4).

The same teaching/comments with respect to Gulati apply.

With respect to claim 10, Omura discloses that the undulated-wall honeycomb structure made of ceramic material, such cordierite, aluminum titanate, etc. (see, e.g., translation page 4).

With respect to claim 16, JP 61-68141 discloses that the honeycomb structure has an undulated surface for increasing the surface area, and carries a catalyst on the surface thereof for purifying exhaust gas. Placing the honeycomb structure in a housing is inherent therein.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omura (JP 61-68141) in view of Gulati (US 4,323,614), as applied to claims 1, 4, 7, 10 and 16 above, and further in view of GB 2,071,640 and Maus et al (WO 96/12876 corresponding to US 6,274,099).

The modified apparatus of Omura is substantially the same as that of the instant claim, but fails to teach whether the deformation is greater at the outer portion than at the center portion.

GB '640 discloses provision of a honeycomb structure having the channels in the outer region clogged for improving the thermal insulation.

Maus et al discloses provision of a honeycomb structure having deformation at the outer region to close channels in the peripheral region for improving the thermal insulation.

It would have been obvious to one having ordinary skill in the art to construct the

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modified honeycomb structure of JP 61-68141 so as the deformation at the outer region is greater than that at the center region so as to improve the thermal insulation of the structure as taught by GB '640 and Maus et al.

7. Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omura (JP 61-68141) in view of Gulati (4,323,614), as applied to claims 1, 4, 7, 10 and 16 above, and further in view of JP 10-059784.

With respect to claim 6, the modified honeycomb structure of Omura is substantially the same as that of the instant claims, but is silent as to the specific amplitude of the undulated walls.

However, JP 10-059784 shows provision of an undulated-wall honeycomb structure having a plurality of cell passages wherein the wall face portions of said walls of said cell passages have an undulated shape, the amplitude of the undulated wall appears to be at least 150 % the thickness of the wall (see, for example, Fig. 1).

It would have been obvious to one having ordinary skill in the art to select an appropriate amplitude for the undulated walls, such as the one taught by JP 10-059784 in the modified apparatus of Omura, to obtain the desired purification thereof on the basis of its suitability for the intended use as a matter of obvious design choice; and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

With respect to claim 18, the modified honeycomb structure of Omura is substantially the same as that of the instant claims, but is silent as to the specific cell density.

However, JP 10-059784 shows provision of an undulated-wall honeycomb structure having a plurality of cell passages wherein the cell density is normally 280 cpsi (see abstract).

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It would have been obvious to one having ordinary skill in the art to select an appropriate cell density for the honeycomb structure, such as the one taught by JP 10-059784, in the modified apparatus of Omura, to obtain the desired purification thereof on the basis of its suitability for the intended use as a matter of obvious design choice, and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable JP 05-123580 in view of Gulati (4,323,614) as applied to claims 1, 6-7, 9-10 and 16 above, and further in view of JP 10-059784. The same comments with respect to JP 10-059784 apply.

9. Claims 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over either (JP 05-123580 in view of Gulati (US 4,323,614)) or (JP 61-68141 in view of Gulati (US 4,323,614) and JP 10-059784) as applied to claims 10 and 16 above, and further in view of Abe et al. (US 5,459,119).

The modified apparatus of either JP 05-123580 or JP 61-68141 as modified by JP 10-059784 is substantially the same as that of the instant claims, but is silent as to the specific wall thickness and porosity.

However, Abe et al discloses the conventionality of providing a honeycomb structure having the wall thickness and porosity as claimed in the instant claims.

The specific wall thickness and porosity of the honeycomb structure are not considered to confer patentability to the claim. The precise wall thickness and porosity of the honeycomb structure would have been considered a result effective variable by one having ordinary skill in the art. As such, without more, the claimed wall thickness and porosity of the honeycomb

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structure cannot be considered "critical". Accordingly, one having Ordinary skill in the art would have routinely optimized the wall thickness and porosity of the honeycomb structure to obtain the desired purification thereof as evidenced by Abe et al (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

* * *

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

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supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer A. Leung

December 8, 2006 